



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Publications of the

MEMBERS OF THE SOCIETY.*

Prof. R. G. AITKEN	{ Lick Observatory, Mount Hamilton, Cal.
Dr. SEBASTIAN ALBRECHT.....	{ Lick Observatory, Mount Hamilton, Cal.
Prof. W. STEADMAN ALDIS,* F.R.A.S..	{ Old Headington, Oxford, England.
Prof. W. D. ALEXANDER.....	{ Box 732, Honolulu, Hawaiian Islands.
Miss EDITH W. ALLYNE.....	{ 2609 Gough St., San Francisco, Cal.
Mr. CHARLES ALTSCHUL.....	{ Lazard Frères & Co., 10 Wall St., New York, N. Y.
Dr. G. DEL AMO.....	{ 4 Conde de Aranda, Madrid, Spain.
Mr. W. F. ARMSTRONG.....	{ 1110 Fourteenth Ave., Seattle, Wash.
Mr. J. J. AUBERTIN,* F.R.A.S.....	{ 33 Duke St., St. James, S. W., London, England.
Mr. ALLEN H. BABCOCK.....	{ 1216 Webster St., Oakland, Cal.
Mr. E. H. BACON.....	{ 2193 Fillmore St., San Francisco, Cal.
Mr. B. A. BAIRD.....	{ Corbett, Wyo., care U. S. R. S.
Mr. GEO. A. BATCHELDER.....	{ Menlo Park, Cal.
Mr. PAUL M. BENEDICT.....	{ Box 637, New Haven, Conn.
Mr. JOHN BIRMINGHAM*.....	{ 416 Jackson St., San Francisco, Cal.
Mr. CHARLES R. BISHOP.....	{ University Bank Bldg., Berkeley, Cal.
Mr. ANSON STILES BLAKE.....	{ Berkeley, Cal.
Mrs. CHARLES D. BLANEY.....	{ Stevens Creek Road, San Jose, Cal.
Mr. J. W. BLESSING.....	{ Risingsun, Ohio.
Mr. HENRY LORD BOULTON, JR.*	{ Carácas, Venezuela, or Box 2015, New York, N. Y.
F.R.A.S.	
Prof. F. P. BRACKETT.....	{ Pomona College, Claremont, Cal.
Mr. J. A. BRASHEAR, F.R.A.S.....	{ Allegheny City, Pa.
Rev. M. S. BRENNAN.....	{ St. Lawrence's Church, St. Louis, Mo.
Mr. EDWARD M. BREWER.....	{ 27 Kilby St., Boston, Mass.
Mr. CHARLES BURCKHALTER, F.R.A.S...	{ Chabot Observatory, Oakland, Cal.
Miss MARY E. BYRD.....	{ R. R. 9, Lawrence, Kan.
Dr. J. CALLANDEAU*.....	{ Oradour sur Vayres, Haute Vienne, France.
Prof. W. W. CAMPBELL.....	{ Director Lick Observatory, Mount Hamilton, Cal.
Foreign Assoc. R.A.S.	
Mr. ANDREW CARNEGIE*.....	{ 5 West 51st St., New York, N. Y.

* A star signifies Life Membership. Total membership, 251 (63 life members).

Mr. J. C. CEBRIAN*	{ 1801 Octavia St., San Francisco, Cal.
Mr. A. J. CHAMPREUX	{ Students' Observatory, Berkeley, Cal.
Mr. H. C. CHESEBROUGH	{ 234 California St., San Francisco, Cal.
Mr. MATEO CLARK*	{ 9 New Broad St., E. C., London, England.
Mr. E. F. CODDINGTON	39 W. 11th Ave., Columbus, O.
Mr. A. L. COLTON*	Box 1148 Madison, Wisconsin.
Major S. COMFORT	{ Care Bedford Petroleum Cie., 67 Boulevard Haussmann, Paris, France.
Mr. FRANK V. CORNISH	{ Monadnock Bldg., San Francisco, Cal.
Mr. J. COSTA	{ 104 Montgomery St., San Francisco, Cal.
Prof. RUSSELL TRACY CRAWFORD	{ Students' Observatory, Berkeley, Cal.
Mr. GEORGE CROCKER*	Mills Bldg., New York, N. Y.
Mr. HENRY J. CROCKER	{ 2301 Laguna St., San Francisco, Cal.
Mr. WILLIAM H. CROCKER*	{ Crocker National Bank, San Francisco, Cal.
Mr. CHARLES S. CROSSLAND	8 Forsythe St., Chelsea, Mass.
Mrs. W. B. CUNNANE	{ 1327 De la Vina St., Santa Barbara, Cal.
Miss S. J. CUNNINGHAM	{ 3308 Arch St., Philadelphia, Pa.
Prof. HEBER D. CURTIS	Casilla 1219, Santiago, Chile.
Mr. CHAS. S. CUSHING	{ 601 Merchants Exchange Building, San Francisco, Cal.
Mr. J. EWEN DAVIDSON*	{ 98 Banbury Road, Oxford, England.
Mrs. JOHN H. DEVEREUX	{ 3226 Euclid Ave., Cleveland, Ohio.
Mr. GEO. L. DILLMAN, C.E.	917 Grand St., Alameda, Cal.
Mr. CECIL GOODRICH DOLMAGE	{ 33 Warwick Road, Earl's Court, S. W. London, Eng.
LL.D., D.C.L., F.R.A.S	
Mr. EDWARD DONOHUE	{ Donohoe-Kelly Banking Co., San Francisco, Cal.
Mr. J. A. DONOHUE	{ Vice-President Donohoe-Kelly Banking Co., San Francisco, Cal.
Mrs. ANNA PALMER DRAPER*	{ 271 Madison Ave., New York, N. Y.
Rev. W. ARTHUR DUCKWORTH, J.P.	{ Orchardleigh, Frome, Somerset, England.
Mr. ERNEST I. DYER	{ Rooms 618-619 Mutual Life Bldg., Seattle, Wash.
Miss S. J. EASTMAN	Ogontz School, Pa.
Prof. GEORGE C. EDWARDS	2546 Dana St., Berkeley, Cal.
Mr. STURLA EINARSON	{ Students' Observatory, Berkeley, Cal.

Publications of the

Mr. FERDINAND ELLERMAN.....	{ Solar Observatory, Mount Wilson, via Pasadena, Cal.
Mrs. JOHN EVERSLED.....	{ The Observatory, Kodaikanal, South India.
Mr. E. A. FATH.....	{ Lick Observatory, Mount Hamilton, Cal.
Mr. S. WILSON FISHER.....	1502 Pine St., Philadelphia, Pa.
Mr. ANDREW B. FORBES*.....	{ Formerly 401 California St., San Francisco, Cal.
Hon. GEORGE STUART FORBES, F.R.A.S....	{ His Majesty's Indian Civil Service, Madras Club, Madras, India.
Mr. ARTHUR W. FOSTER*.....	{ Flood Building, San Francisco, Cal.
Mr. H. C. FRICK*.....	42 Fifth Ave., Pittsburgh, Pa.
Mr. ROBERT D. FRY*.....	{ 628 Montgomery St., San Francisco, Cal.
Mr. J. D. GALLOWAY.....	1426 Myrtle St., Oakland, Cal.
Miss ELIZABETH E. GARVEY.....	{ 2440 Hillside Ave., Berkeley, Cal.
Mr. OTTO VON GELDERN.....	{ 1978 Broadway, San Francisco, Cal.
Sir DAVID GILL, K.C.B., F.R.A.S.....	{ Athenæum Club, Pall Mall, London, England.
Miss ESTELLE GLANCY.....	{ Students' Observatory, Berkeley, Cal.
Mr. ELWYN B. GOULD.....	{ 808 Juniper St., San Diego, Cal.
Prof. JAMES E. GOULD.....	{ University Station, Seattle, Wash.
Mr. JOSEPH D. GRANT*.....	Burlingame, Cal.
Mr. WM. GRANT.....	{ 601 Merchants Exchange Building, San Francisco, Cal.
Mr. ANDREW GREIG*.....	{ 3 Duntrune Terrace, Broughty Ferry, Dundee, Scotland.
Mr. C. P. GRIMWOOD.....	{ 722 Monadnock Bldg., San Francisco, Cal.
Mr. J. O'B. GUNN.....	{ Mechanics' Savings Bank, 143 Montgomery St., San Francisco, Cal.
Mr. JOHN R. HAAKE.....	{ 308 California St., San Francisco, Cal.
Prof. GEORGE E. HALE*.....	{ Director of the Solar Observatory, Solar Observatory Office, Pasadena, Cal.
Foreign Assoc. R.A.S.	
Mr. C. F. HARMS.....	{ 140 Broad St., New York, N. Y.
Mr. JACKSON HATCH.....	Porter Building, San Jose, Cal.
Mrs. PHEBE A. HEARST.....	{ 1414 Post St., San Francisco, Cal.
Mr. ANDREW P. HENKEL.....	{ Erie and Mooney Aves., Hyde Park, Cincinnati, Ohio.
Rev. G. HEREDIA, S.J., F.R.A.S.....	{ Director of the Observatory, Puebla, Mexico.

Astronomical Society of the Pacific. 5

Mr. HORACE L. HILL*.....	{ 3149 Twenty-second St., San Francisco, Cal.
Miss ADELAIDE M. HOBE.....	{ Lick Observatory, Mount Hamilton, Cal.
Mr. BEVERLY L. HODGHEAD.....	{ 601 Merchants Exchange Building, San Francisco, Cal.
Mr. SAMUEL V. HOFFMAN,* F.R.A.S....	{ 91 Madison Ave., Morristown, N. J.
Dr. EDWARD S. HOLDEN*.....	{ U. S. Military Academy, West Point, N. Y.
Foreign Assoc. R.A.S.	
Mr. JOHN D. HOOKER.....	{ 325 West Adams St., Los Angeles, Cal.
Hon. C. WEBB HOWARD*.....	{ Pacific-Union Club, San Francisco, Cal.
Mr. JOHN L. HOWARD.....	{ 340 Steuart St., San Francisco, Cal.
Mr. WM. HOWAT*.....	{ 458 William St., Melbourne, Victoria.
Prof. CHAS. S. HOWE, F.R.A.S.....	{ Case Observatory, Cleveland, Ohio.
Prof. W. J. HUSSEY.....	{ Director Detroit Observatory, Ann Arbor, Michigan.
Foreign Assoc. R.A.S.	
Mr. EDWARD IRVING.....	{ 1530 Shattuck Ave., Berkeley, Cal.
Mr. FRANK JAYNES.....	{ W. U. Telegraph Co., San Francisco, Cal.
Miss ALICE JOY.....	{ 2521 Piedmont Ave., Berkeley, Cal.
Mr. CHARLES C. KEENEY*.....	{ 2220 Clay St., San Francisco, Cal.
Mr. JAMES R. KELLY.....	{ Hibernia Savings and Loan Society, San Francisco, Cal.
Prof. A. E. KENNELLY,* F.R.A.S.....	{ Division of Engineering, Harvard University, Cambridge, Mass.
Mr. TORVALD KÖHL*.....	{ Odder, Denmark.
Mr. FR. KOEPPEN.....	{ Schöne Aussicht 20, Wiesbaden, Germany.
Mr. C. F. DE LANDERO*.....	{ P. O. Box 1, Pachuca, State Hidalgo, Mexico.
Prof. EDGAR L. LARKIN.....	{ Director Mount Lowe Observatory, Echo Mountain, Cal.
Hon. MANUEL FERNANDEZ LEAL,....	{ Casa de Moneda, City of Mexico, Mexico.
Rev. Prof. E. LEDGER, M.A., F.R.A.S....	{ Protea, Reigate, Surrey, England.
Prof. A. O. LEUSCHNER, F.R.A.S.....	{ Director Students' Observatory, Berkeley, Cal.
Mr. CLARENCE MACKENZIE LEWIS*...	{ Care Wm. Salomon & Co., 25 Broad St., New York, N. Y.
Mr. ADOLPH LIETZ.....	{ 632 Commercial St., San Francisco, Cal.
Mr. JOHN D. LOCKE.....	{ Haverhill, New Hampshire.
Mr. HENRY B. LOOMIS*.....	{ Seattle, Washington.

Mr. W. H. LOWDEN.....	{ 314 California St., San Francisco, Cal.
Mr. EDWARD G. LUKENS.....	{ 1362 Jackson St., Oakland, Cal.
Hon. GEO. RUSSELL LUKENS.....	{ 1350 Madison St., Oakland, Cal.
Dr. JAMES D. MADDRILL, F.R.A.S.....	{ Latitude Observatory, Ukiah, Cal.
Mr. WILLIAM A. MAGEE.....	{ 5 Montgomery St., San Francisco, Cal.
Mr. MARSDEN MANSON, C.E., PH.D....	{ Room 801, 4 Montgomery St., San Francisco, Cal.
Mr. F. MARTENS.....	{ Collegepoint, Queens Co., New York.
Mr. JOHN MARTIN.....	{ Puruatanga, Martinborough, Wairarapa, Wellington, New Zealand.
Mr. W. H. MAW,* F.R.A.S.....	{ 18 Addison Road, Kensington, London, England.
Miss MARY G. MCCOMAS.....	{ 2200 Fulton St., Berkeley, Cal.
Mr. GARRET W. MCENERNEY.....	{ 1277 Flood Bldg., San Francisco, Cal.
Prof. T. E. MCKINNEY.....	{ Wesleyan University, Middletown, Conn.
Prof. MALCOLM MCNEILL.....	{ Lake Forest, Ill.
Mr. W. F. MEYER.....	{ Students' Observatory, Berkeley, Cal.
Mr. J. WALTER MILES.....	{ Irwin, Pa.
Prof. E. MILLER.....	{ University of Kansas, Lawrence, Kansas.
Hon. D. O. MILLS*.....	{ 15 Broad St., New York, N. Y.
Mr. JAMES K. MOFFITT.....	{ First National Bank, San Francisco, Cal.
Mr. E. J. MOLERA,* C.E.....	{ 2025 Sacramento St., San Francisco, Cal.
Mr. W. H. S. MONCK, F.R.A.S.....	{ 16 Earlsfort Terrace, Dublin, Ireland.
Dr. J. H. MOORE.....	{ Lick Observatory, Mount Hamilton, Cal.
Mr. FREMONT MORSE, U.S.C. & G.SURVEY.....	{ 1601 Bush St., San Francisco, Cal.
Mr. C. A. MURDOCK.....	{ 2393 Filbert St., San Francisco, Cal.
Hon. B. D. MURPHY*.....	{ Formerly 530 California St., San Francisco, Cal.
Mr. CHARLES NELSON.....	{ 144 Steuart St., San Francisco, Cal.
Mr. H. F. NEWALL,* F.R.A.S.....	{ Observatory of the University, Cambridge, England.
Dr. B. L. NEWKIRK.....	{ University of Minnesota, Minneapolis, Minn.
Mr. P. NOORDHOFF.....	{ Groeningen, Holland.
Miss ROSE O'HALLORAN.....	{ 726 Ashbury St., San Francisco, Cal.
Mr. GEORGE FREDERICK PADDOCK.....	{ Casilla 1219, Santiago, Chile.

Astronomical Society of the Pacific.

7

Hon. GEORGE C. PARDEE.....	Oakland, Cal.
Mr. JOHN PATTEN*.....	{ 325 E. 97th St., New York, N. Y.
Hon. GEO. C. PERKINS*.....	Oakland, Cal.
Prof. C. D. PERRINE.....	{ Lick Observatory, Mount Ham- ilton, Cal.
Foreign Assoc. R.A.S.	
Hon. JAMES D. PHELAN.....	{ Mutual Savings Bank Bldg., San Francisco, Cal.
Mr. HENRY PHIPPS, JR.*.....	{ Carnegie, Phipps & Co., Pitts- burgh, Pa.
Mr. LAWRENCE H. PIERSON.....	{ Pacific Pine Co., San Francisco, Cal.
Mr. RUTHVEN W. PIKE*.....	{ 5037 Madison Ave., Chicago, Illinois.
Dr. THOS. PORTER.....	{ Petersham, New South Wales, Australia.
Miss JULIET PORTER*.....	37 Deane St., Worcester, Mass.
Mr. CHARLES A. POST, F.R.A.S.....	Bayport, Long Island, N. Y.
Mr. WALTER A. POST, F.R.A.S.....	Newport News, Virginia.
Mr. CARL RAMUS.....	{ Ass't Surgeon U. S. Marine Hospital, San Francisco, Cal.
Rev. J. L. RICARD, S.J.....	Santa Clara, Cal.
Mr. DANIEL S. RICHARDSON.....	{ Cor. Lincoln and Summit Sts., East Oakland, Cal.
Mrs. ISAAC ROBERTS, D. SC.....	{ Chateau Rosa Bonheur. By Thomery, Seine et Marne, France.
Mrs. ARTHUR RODGERS*.....	{ Formerly of Leavenworth and Vallejo Sts., San Francisco, Cal.
The EARL OF ROSSE, F.R.A.S.....	{ Birr Castle, Parsonstown, Ire- land.
Baron ALBERT VON ROTHSCHILD*.....	Vienna, Austria.
Mr. W. P. RUSSELL.....	{ Pomona College, Claremont, Cal.
Mr. E. J. DE SABLA, JR.*.....	{ 1916 Octavia St., San Fran- cisco, Cal.
Mr. JOHN W. SALSBUURY.....	Port Tampa City, Florida.
Mr. MORGAN SANDERS	{ 1419 West Lanvale St., Balti- more, Md.
Prof. J. M. SCHAEBERLE*.....	{ 502 Second St., Ann Arbor, Mich.
Mr. JACOB H. SCHIFF*.....	{ 932 Fifth Ave., New York, N. Y.
Mrs. E. T. SCHILD.....	{ 1908 Broadway, San Francisco, Cal.
Mr. HERMAN SCHUSSLER.....	{ Pacific-Union Club, San Fran- cisco, Cal.
Mr. JAMES L. SCOTT, F.R.A.S.....	{ Care Scott, Harding & Co., Shanghai, China.
Prof. FREDERICK H. SEARES.....	{ Director Laws Observatory, Columbia, Mo.
Rev. GEORGE M. SEARLE, C.S.P.....	{ St. Paul's Church, 415 W. 59th St., New York, N. Y.

Dr. T. J. J. SEE,* F.R.A.S.....	{ Naval Observatory, Mare Isl- and, Cal.
Mr. CHARLES S. SMITH*.....	{ 25 W. 47th St., New York, N. Y.
Mr. ELLIOTT SMITH.....	{ Cincinnati Observatory, Sta- tion O, Cincinnati, Ohio.
Mr. E. C. SMITH*.....	{ Saint Albans, Vermont.
Mr. SOMMERS N. SMITH.....	{ The Neafie & Levy Ship and Engine Building Co., Phila- delphia, Pa.
Mr. WM. H. SMYTH.....	{ Fernwald, Berkeley, Cal.
Prof. M. B. SNYDER, F.R.A.S.....	{ Director of Philadelphia Ob- servatory, Philadelphia, Pa.
Mr. GEORGE W. SPENCER.....	{ 45 Steuart St., San Francisco, Cal.
Mr. A. B. SPRECKELS*.....	{ 58 Clay St., San Francisco, Cal.
Mr. C. A. SPRECKELS*.....	{ San Mateo, Cal.
Mrs. C. A. SPRECKELS*.....	{ San Mateo, Cal.
Mr. RUDOLPH SPRECKELS	{ 1400 Pacific Ave., San Fran- cisco, Cal.
Miss GERTRUDE STANFORD.....	{ Warm Springs, Alameda Co., Cal.
Mr. THOS. W. STANFORD*.....	{ 142 Russell St., Melbourne, Victoria.
Mr. C. M. ST. JOHN.....	{ U. S. Custom House, San Francisco, Cal.
Mr. JULIUS STONE*.....	{ Care of the Ohio Central Fuel Co., Columbus, Ohio.
Mr. V. STRÓYBERG*.....	{ Observatory, Copenhagen, Den- mark.
Mr. DANIEL SUTER.....	{ 317 Bush St., San Francisco, Cal.
Mr. C. F. A. TALBOT.....	{ P. O. Box 2653, San Francisco, Cal.
Mrs. LOUIS TAUSSIG.....	{ 2127 California St., San Fran- cisco, Cal.
Dr. OTTO TETENS.....	{ Royal Observatory, Kiel, Ger- many.
Mr. CURTIS H. THOMAS.....	{ Traer, Ia.
Dr. JOHN M. THOME*..... Foreign Assoc. R.A.S.	{ National Observatory, Cordo- ba, Argentine Republic.
Dr. SIDNEY D. TOWNLEY.....	{ 575 Lincoln Ave., Palo Alto, Cal.
Dr. A. S. TUCHLER.....	{ 703 Van Ness Ave., San Fran- cisco, Cal.
Prof. R. H. TUCKER.....	{ Lick Observatory, Mount Ham- ilton, Cal.
Dr. ARTHUR B. TURNER.....	{ Montclair, N. J.
Mr. HENRY J. TURNER*.....	{ Woodville, Rappahannock Co., Virginia.
Major OMAR A. TURNEY.....	{ Box 396, Phoenix, Arizona.
Mr. R. J. TYSON*.....	{ Seaboard Bank, 24 Market St., San Francisco, Cal.

Astronomical Society of the Pacific. 9

Mr. FELIPE VALLE.....	{ Director National Observa- tory, Tacubaya, Mexico.
Mr. EDWARD H. VAN INGEN.....	{ 9 East 71st St., New York, N. Y.
Mr. F. W. VAN SICKLEN.....	{ 1831 Central Ave., Alameda, Cal.
Dr. W. VILLIGER.....	{ Care of Carl Zeiss; z. Hd. Dr. M. von Rohr, Jena, Germany.
Mr. W. R. WARNER, F.R.A.S.....	{ Care of Warner & Swasey, East Prospect St., Cleveland, Ohio.
Mrs. W. SEWARD WEBB.....	{ 680 5th Ave., New York, N. Y.
Prof. Dr. L. WEINEK.....	{ Imperial Observatory, Prague, Austro-Hungary.
Mr. C. A. G. WEYMOUTH.....	{ 2325 Blake St., Berkeley, Cal.
Dr. ANDREW D. WHITE*.....	{ Ithaca, N. Y.
Mrs. ELSIE HADLEY WHITE.....	{ 209 West Park Ave., Valley City, North Dakota.
Mrs. MARY H. WILLMARTH*.....	{ 222 Michigan Ave., Chicago, Ill.
Colonel B. WITKOVSKY*.....	{ St. Petersburg, W. O. 9th line, 44, Russia.
Mr. FREDERICK W. ZEILE*.....	{ 1818 California St., San Fran- cisco, Cal.
Prof. C. V. ZENGER, F.R.A.S.....	{ Smichow, Prague, Bohemia, Austro-Hungary.
Mr. F. R. ZIEL.....	{ 825 Merchants Exchange Build- ing, San Francisco, Cal

INSTITUTIONAL MEMBERS.

FIELD MEMORIAL OBSERVATORY.....	{ Williams College, Williams- town, Mass.
IMPERIAL OBSERVATORY	{ University of St. Petersburg, Russia.
ASTRONOMICAL AND PHYSICAL OBSER- VATORY	{ Tashkent, Turkestan, Russia.
CALIFORNIA STATE LIBRARY.....	{ Sacramento, Cal.
LIBRARY OF THE CHABOT OBSERVATORY	{ Oakland, Cal.
FREE PUBLIC LIBRARY.....	{ Worcester, Mass.
THE JOHN CRERAR LIBRARY.....	{ Chicago, Ill.
LIBRARY OF THE LELAND STANFORD JR. UNIVERSITY	{ Stanford University, Cal.
LIBRARY OF THE LICK OBSERVATORY...	{ Mount Hamilton, Cal.
LIBRARY OF THE MECHANICS' INSTITUTE	{ 99 Grove St., San Francisco, Cal.
LIBRARY OF THE MINNEAPOLIS ATHE- NÆUM	{ Minneapolis, Minn.
NEW YORK PUBLIC LIBRARY.....	{ 40 Lafayette Place, New York, N. Y.
OAKLAND FREE PUBLIC LIBRARY.....	{ Oakland, Cal.
LIBRARY OF PRINCETON UNIVERSITY...	{ Princeton, N. J.
THE PUBLIC LIBRARY.....	{ Boston, Mass.
LIBRARY, UNIVERSITY OF WASHINGTON	{ Seattle, Wash.
SEATTLE PUBLIC LIBRARY.....	{ Seattle, Wash.

Publications of the

LIBRARY OF ST. IGNATIUS COLLEGE....	{ 2211 Hayes St., San Francisco, Cal.
SWARTHMORE COLLEGE LIBRARY.....	Swarthmore, Pa.
LIBRARY OF THE U. S. MILITARY ACADEMY	{ West Point, N. Y.
LIBRARY OF THE UNIVERSITY OF CALI- FORNIA	{ Berkeley, Cal.
LIBRARY OF THE UNIVERSITY OF ILLI- NOIS	{ University Station, Urbana, Ill.
LIBRARY OF THE UNIVERSITY OF IN- DIANA	{ Bloomington, Indiana.
LIBRARY OF THE UNIVERSITY OF PENN- SYLVANIA	{ Philadelphia, Pa.
LIBRARY OF THE UNIVERSITY OF SOFIA.	Sofia, Bulgaria, Europe.
WELLESLEY COLLEGE LIBRARY	Wellesley, Mass.
LIBRARY OF YALE UNIVERSITY.....	New Haven, Conn.
LOWELL OBSERVATORY	Flagstaff, Ariz.
SHATTUCK OBSERVATORY	{ Dartmouth College, Hanover, N. H.

CORRESPONDING INSTITUTIONS.

Albany, New York, Dudley Observatory.
 Allegheny, Pennsylvania, Allegheny Observatory.
 Armagh, Ireland, Armagh Observatory.
 Berlin, Germany, Königl. Astronomisches Recheninstitut.
 Berlin, Germany, Königliche Sternwarte.
 Brussels, Belgium, Bibliothèque de la Société Belge d'Astronomie,
 27 Montagne de la Cour.
 Brussels, Belgium, Observatoire Royal de Belgique.
 Cambridge, England, University Observatory.
 Cambridge, Massachusetts, Harvard College Observatory.
 Cape Town, Africa, Royal Observatory.
 Catania, Italy, Società degli Spettroscopisti Italiani.
 Christiania, Norway, Universitæts-Sternwarte.
 Cincinnati, Ohio, Cincinnati Observatory, Station O.
 Columbia, Missouri, Laws Observatory, University of Missouri.
 Cordoba, Argentine Republic, National Observatory.
 Dorpat, Russia, University Observatory.
 Dublin, Ireland, Dunsink Observatory.
 Dublin, Ireland, Royal Dublin Society.
 Edinburgh, Scotland, Royal Observatory.
 Geneva, Switzerland, Observatoire.
 Glasgow, Scotland, University Observatory.
 Gotha, Germany, Grossherzogliche Sternwarte.
 Goettingen, Germany, Königliche Sternwarte.
 Greenwich, England, Royal Observatory.
 Hamburg, Germany, Hamburger Sternwarte.
 Heidelberg, Germany, Astrometrische Abteilung der Grossherzoglichen
 Sternwarte.

Astronomical Society of the Pacific. 11

Heidelberg, Germany, Astrophysikalische Abteilung der Grossherzoglichen Sternwarte.
Helsingfors, Russia, University Observatory.
Hiram, Ohio, Observatory of Hiram College.
Kasan, Russia, University Astronomical Observatory.
Kiel, Germany, Universitäts-Sternwarte.
Kodaikanal, Palani Hills, South India, Observatory.
Koenigsberg, in Pr. Germany, Königliche Sternwarte.
La Plata, Argentine Republic, Observatory.
Leipsic, Germany, Universitäts-Sternwarte.
Leyden, Holland, Universitäts-Sternwarte.
Lisbon (Tapada), Portugal, Real Observatorio.
London, England, British Astronomical Association, care of F. W. Levander, 30 North Villas, Camden Square, N. W.
London, England, British Museum.
London, England, Royal Astronomical Society.
London, England, 3 Verulam Bldgs., Gray's Inn, The Nautical Almanac.
Lund, Sweden, University Observatory.
Madison, Wisconsin, Washburn Observatory.
Madrid, Spain, Observatorio Astronómico.
Marseilles, France, Observatoire.
Melbourne, Victoria, Observatory.
Mexico, Mexico, Sociedad Científica "Antonio Alzate."
Milan, Italy, Osservatorio Astronomico di Brera.
Moscow, Russia, University Observatory.
Mount Wilson, via Pasadena, Cal., Solar Observatory.
Munich, Germany, Königliche Sternwarte.
Naples, Italy, Osservatorio Astronomico.
New Haven, Connecticut, Yale University Observatory.
New York, New York, American Mathematical Society.
New York, New York, Columbia University Observatory.
Nice, France, Observatoire.
Northfield, Minnesota, Goodsell Observatory.
Oxford, England, Radcliffe Observatory.
Oxford, England, University Observatory.
Padua, Italy, Osservatorio Astronomico.
Paris, France, Bureau des Longitudes.
Paris, France, Observatoire National.
Paris, France, Rue Cassini 16, Société Astronomique de France.
Philadelphia, Pa., 105 South Fifth St., American Philosophical Society.
Potsdam, Germany, Astrophysikalisches Observatorium.
Prague, Austro-Hungary, Universitäts-Sternwarte.
Pulkowa, Russia, Imperial Observatory.
Rio de Janeiro, Brazil, Observatory.
Rome, Italy, Osservatorio Astronomico del Collegio Romano.
Rome, Italy, Specula Vaticana.
San Francisco, California Academy of Sciences.
San Francisco, California, Technical Society of the Pacific Coast.
Stockholm, Sweden, University Observatory.

Strassburg, Germany, Universitäts-Sternwarte.
 Sydney, New South Wales, Observatory.
 Tacubaya, Mexico, Observatorio Astronomico Nacional.
 Tokio, Japan, University Observatory.
 Toronto, Canada, Astronomical and Physical Society of Toronto.
 Toulouse, France, Observatoire.
 Turin, Italy, Osservatorio Astronomico.
 University Park, Colorado, Chamberlin Observatory.
 University of Virginia, Virginia, McCormick Observatory.
 Upper Derby, Pennsylvania, Flower Observatory, University of Pennsylvania.
 Upsala, Sweden, University Observatory.
 Vienna, Austria, K. K. Sternwarte.
 Vienna (Ottakring), Austria, Von Kuffnersche Sternwarte.
 Washington, District of Columbia, Library of Congress, Periodical Division.
 Washington, District of Columbia, National Academy of Sciences.
 Washington, District of Columbia, Naval Observatory.
 Washington, District of Columbia, Smithsonian Institution.
 Washington, District of Columbia, The American Ephemeris.
 Washington, District of Columbia, U. S. Coast and Geodetic Survey.
 Williams Bay, Wisconsin, Yerkes Observatory.
 Zurich, Switzerland, Observatory.

EXCHANGES.

Astrophysical Journal, Williams Bay, Wisconsin.
Popular Astronomy, Northfield, Minn.
 Prof. Dr. H. J. Klein, Editor of *Sirius*, Theresien St. 85, Köln-Lindenthal, Germany.
The Observatory, Greenwich, England.
The Journal of the Royal Astronomical Society of Canada, Toronto, Canada.
Revista di Astronomia, Società Astronomica Italiana, Turin, Italy.

FOR REVIEW.

[See *Publications A. S. P.*, Vol. VIII, p. 101.]

The Call, San Francisco, California.
The Chronicle, San Francisco, California.
The Examiner, San Francisco, California.
The Mercury, San Jose, California.
The Record-Union, Sacramento, California.
The Times, Los Angeles, California.
The Tribune, Oakland, California.
